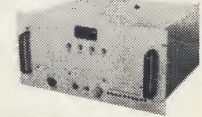
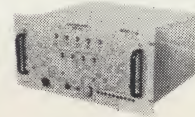


METRIC**Systems Corporation****CUSTOM DIGITAL SYSTEMS FROM STANDARD SUBASSEMBLIES****TIMING EQUIPMENT****AMR TIMING SYSTEM****Model 8379**

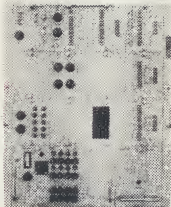
Timing System Model 8379 provides Atlantic Missile Range Time Codes B1, B2, C1, D1, and D5. The system features automatic or manual WWV synchronization, a WWV receiver, a synchronization oscilloscope, a waveform monitoring oscilloscope, a test point selector switch, and a versatile output patch panel. Models designed for ground station, airborne, or shipborne operation are available.

IRIG TIMING SYSTEM**Model 8020**

Timing System Model 8020 generates IRIG Codes A, B, C, and D. The system contains receivers for automatic or manual synchronization to WWV, VLF or LORAN "C". Other features are: a Decimal Time Display in Hours, Minutes, and Seconds, an oscillator stability of 1 part in 10^{10} per day, an oscilloscope for waveform monitoring and fine synchronization, and an output panel for patching time codes and pulse rates to any one of 10AC and 12DC line driver amplifiers.

CAMERA TIMING UNITS**Models 8021 & 8024****ASKANIA 8021****BOWEN 8024**

The Askania and Bowen Camera Demodulators extract remote camera control and timing signals from the IRIG Time Code "B" signal. The units provide relay closures initiating shutter operation and high level neon outputs for film track timing. Three cameras may be started or stopped, remotely and independently, using three camera demodulators with channel selector switches set for three different IRIG "B" control function bit channels.

AMR TIME CODE GENERATOR**Model 8379-1**

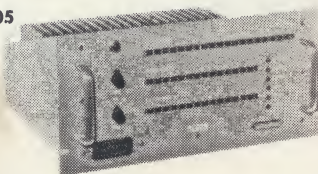
Time Code Generator Model 8379-1 is designed for mobile operation and is suitable for either airborne or shipborne use. Relay and neon output amplifiers are provided. The unit generates AMR Time Codes, Numbers B1, B2, C1, D1, and D5. Solid-state modularized construction permits expanding to additional codes by adding appropriate code generator modules.

IRIG TIME CODE GENERATOR**Model 8020-1**

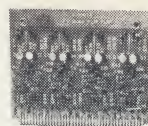
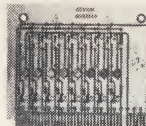
Model 8020-1 Time Code Generator simultaneously generates IRIG Codes A, B, C, and D synchronized to within 1 microsecond. Additional features include: Solid-state printed circuit card construction, taper-pin wiring, propagation delay correction to better than 1 microsecond, digital time retard and advance, parallel binary coded decimal Time-of-Day, and parallel straight binary Time-of-Day in millisecond increments. Other output formats and pulse rates are available on special order.

TIME DISPLAY UNIT**Model 8729**

Time Display Unit Model 8729 is a digital code format translator and visual indicator, designed to accept one of several standard time codes and present a decimal time display in hours, minutes, and seconds. The unit is completely self-contained, including power supply and removable indicator section. Solid-state modular construction is employed throughout and provisions are incorporated for driving as many as 12 remote indicator units.

DIGITAL DATA PROCESSING EQUIPMENT**DATA FORMAT CONVERTER****Model 8005**

Digital Data Format Converter (DECON), Model 8005, accepts 5 separate digital words in parallel reflected binary code and provides readout information in serial straight binary code. The unit is designed for standard 19-inch rack mounting and is entirely solid-state except for indicator lamps.

STANDARD PRINTED CIRCUIT CARDS

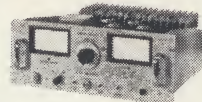
Metric Systems produces a large variety of Standard Printed Circuit modules. Most often used types are stocked for rapid delivery on custom data systems. Printed Circuit modules are fabricated on 41 pin $4\frac{1}{2}'' \times 5\frac{1}{2}''$ epoxy impregnated fiber glass boards. Each printed circuit logic module is individually inspected for quality of construction and tested for circuit performance.

MANUAL INTERVENTION & DISPLAY SYSTEM**MAID****MODEL 8038**

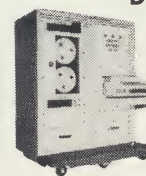
The Manual Intervention and Display System (MAID), Model 8038, was developed to provide a means for controlling the IBM 7094 Computer on a real time basis from a remote location. Real time control and intervention can, in many cases, eliminate the necessity of reprogramming the computer when unaccounted for developments arise. A more flexible control is obtained over the computer by having real time manual intervention.

PEDESTAL DIGITIZING KITS**Control Unit****AZ and EL Shift Registers****AZ and EL Encoders**

Metric Systems manufactures a variety of digitizing kits for use on two-axis pedestals having accuracies ranging from 13-bits to 21-bits. The kits provide serial data suitable for recording on magnetic tape and a Decimal Display for operator use. Digitizing kits include the following items: Azimuth and Elevation Shaft Angle Encoders, Azimuth and Elevation Data Registers, Data Control Unit, and Azimuth and Elevation Decimal Display Units (optional).

DIGITAL MOVING TARGET SIMULATOR**Model 8007M**

Simulator Model 8007M is designed for use with "multiple time around" tracking radars. Late model radars, such as the AN/FPS-16 (V) radiate a number of transmitter pulses before the first distant echo is received. To simulate a distant target, the simulator must be capable of receiving several input pulses before producing the first delayed echo pulse. Conventional simulators are not capable of responding to an input pulse before the delay interval is completed. In Metric's Model 8007M Simulator, as many as eighteen (18) pulses may be propagating through the delay section simultaneously.

AUTOMATIC DIGITAL DATA LOGGER**MODEL 8054**

The Automatic Digital Data Logger, Model 8054, performs storage, conversion, parity generation, and logging of binary coded decimal (BCD) data generated by the AN/GJQ-9(V)2 Checkout Sequence Programming Set. The input data to this system is recorded on magnetic tape in an IBM compatible format.

The record length is variable and in the case of manual data, is controlled by manual operation of an "end of record" switch. Record length is limited only by the computer or the interface equipment.

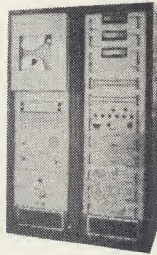
Metric Systems Corporation produces an assortment of digital equipment ranging in scope from simple logic modules to complex digital instrumentation systems. Digital Systems designed and fabricated by Metric Systems are now in operation on both the Atlantic and Pacific Missile Ranges and most other Aerospace Instrumentation installations. Metric Systems invites your inquiries for solutions to problems involving special applications.

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METRIC**Systems Corporation****CUSTOM DIGITAL SYSTEMS FROM STANDARD SUBASSEMBLIES****DATA TRANSMITTERS****HIGH DENSITY
DATA TRANSMITTER****MODEL 8062**

Model 8062 High Density Data Transmitter will accept serial Azimuth, Elevation and Range data words from a radar set. Timing pulses and a parallel time word are obtained from a time code generator.

The transmitter will accept 17 serial bits of Azimuth and Elevation data, a 20-bit Range word and two 36-bit auxiliary words which may be manually set in through the use of front panel switches.

**LOW DENSITY
DATA TRANSMITTER****MODEL 8031**

Model 8031 (CASY II) receives digital Radar Acquisition Data from a 7094 computer in the form of three 13-bit data words, 6 auxiliary bits and one sub-synch. The words are parallel dumped into a 45-bit input buffer register, transferred to a shift register and shifted out serially at 480-bits/10 frames per second rate.

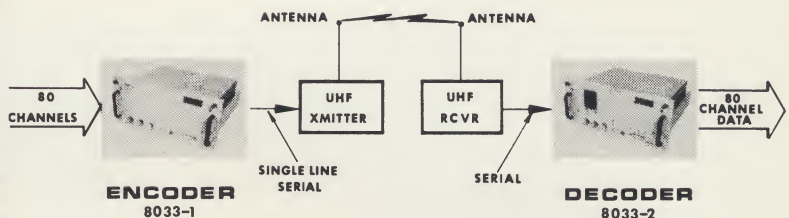
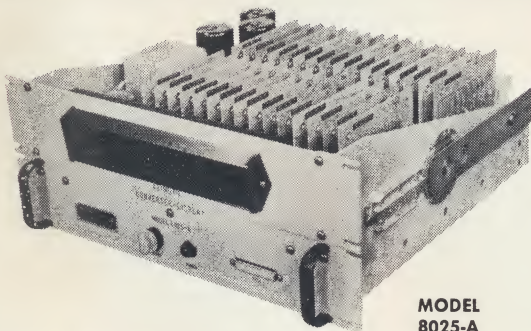
The output bits modulate a 1920 CPS carrier to drive a standard 600 ohm telephone line. An internal test generator is provided which is capable of simulating computer commands.

**MODEL 8023****MULTIPLE RADAR
DATA TRANSMITTER****Model 8023**

Real Time Data System, Model 8023, is the entire digital data link between 4 AN/FPS-16 radars and a Univac 1218 computer. Interrogate and Shift commands generated by the system are transmitted to the 4 radars. Incoming digital radar coordinate words are tagged with 9-bit identification and 23-bit time information, converted to Univac format, stored, and fed into the computer upon command.

TIME DISTRIBUTION SYSTEM

Model 8033 Time Distribution System transmits up to 80 channels of time code data from a centrally located transmitting station to any number of remotely located receiving stations. A complete Time Distribution System consists of a single 8033-1 Encoder unit located at the central transmitting station and a 8033-2 Decoder unit located at each receiving station. The Transmitting Encoder accepts up to 80 separate input data lines and converts to a single output line suitable for transmission by a radio link. The Decoder receives the single line serial information and reconstructs the original 80 channel input data. Each of the 80 data channels may be operated at bit rates as high as 1000 bits per second. The system contains a unique frame format and precision crystal clock to insure that the output data is an accurate reproduction of the input information. The system is all solid-state using Metric Systems' standard plug-in printed circuit cards.

**TIME DISTRIBUTION BY
RADIO LINK****BINARY/DECIMAL CONVERTER****BINARY/DECIMAL CONVERTER AND DATA DISPLAY****MODEL
8025-A**

The Model 8025-A Binary-to-Decimal Converter/Display is a device for the rapid conversion of straight binary coded words of up to 19 bits to their decimal equivalent and displaying the result.

The unit illustrated can complete the conversions and present a display of up to six digits in less than one millisecond.

The converter requires parallel input, one line for each bit. The input word is scanned from the most significant bit, in turn, to the least significant bit. If a "1" is present, pulses equal to the decimal equivalent of that particular bit are sent to the decimal counter. After all the bit lines have been scanned, the decimal counter will contain a count equivalent to the decimal value of the input binary word. The decimal counter output, which is a 1-2-4-8 code, is converted to straight decimal in a series of NIXIE DRIVERS which drive the indicator tubes.

It can be seen that since each decade is loaded with its decimal equivalent of a binary bit in a parallel fashion, most significant bit first, the time required for a complete conversion is far less than that required by simply counting up the bit equivalent one pulse at a time. Furthermore, since the display is loaded by pulses equal in number to a particular bit equivalent, the bit equivalent is a matter of choice or mathematical relationship making it possible to read the input binary word in any terms, i.e., bits, radians, degrees, minutes, seconds, miles per hour, pounds, ounces, feet per second etc., in fact, any function that can be quantized.

Metric Systems Corporation produces an assortment of digital equipment ranging in scope from simple logic modules to complex digital instrumentation systems. Digital Systems designed and fabricated by Metric Systems are now in operation on both the Atlantic and Pacific Missile Ranges and most other Aerospace Instrumentation installations. Metric Systems invites your inquiries for solutions to problems involving special applications.

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